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tion of specific levels of protein phosphorylation and for their potential as pharmaceutical agents. Using a rational drug design approach, a novel series of phosphatase inhibitors was developed to study the effects of protein-phosphorylation in insulin resistant tissues. The synthesis and biological data of this series will be presented as well as the proposed binding interactions between the molecules and the target enzyme

426.

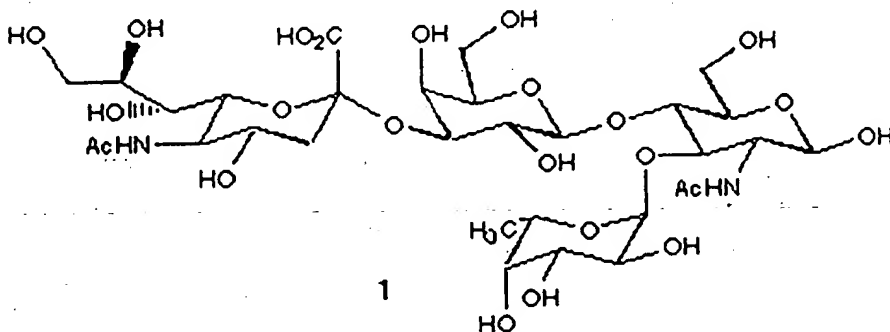
TOTAL SYNTHESIS OF (S)-3*N*-(*N*-(BENZOTHIOPHENE-2-CARBONYL)-L-LEUCINYL)AMINO-(15*N*)-1*N*-(3-(2-PYRIDYL)PHENYL)ACETYLAMINO BUTAN-2-ONE-[2,3,4-¹³C]: A SELECTIVE INHIBITOR OF CATHEPSIN K. Anthony J. Villani, Xin Peng, David Saunders, Dennis Yamashita, and J. Richard Heys
Synthetic Chemistry, Radiochemistry Section and Medicinal Chemistry, SmithKline Beecham Pharmaceuticals, 709 Swedeland Road, PO Box 1539, King of Prussia, PA 19406. fax (610) 27- 4110. Villani@sbphrd.com

The title compound is a novel inhibitor of the cysteine protease, cathepsin K. A ¹³C and ¹⁵N isotopically labeled version of it was prepared in order to determine if a tetrahedral adduct is formed between it and the active site of cathepsin K by NMR. The total synthesis was accomplished by convergent coupling followed by Dess-Martin oxidation. This and the utility of the Weinreb amide in the preparation of the key labeled aminoalcohol intermediate derived from alanine will be discussed.

427.

DESIGN AND SYNTHESIS OF NOVEL SELECTIN INHIBITORS. Paresh M. Thakker, Neelu Kaila, and Steve Tam. SMDD-Medicinal Chemistry, Genetics Institute, Inc., 85 Bolton Street, Cambridge, MA 02140. fax (617) 498-8993. PThakker@genetics.com

The inflammatory response in the circulatory system requires that leukocytes adhere to and extravasate through the vascular endothelium to reach the site of injury. The initial adherence is mediated by selectins, including P- or E- selectin on endothelium, and L-selectin on leukocytes. Sialyl Lewis x, 1 (sLex) has been identified as the essential oligosaccharide epitope on cell surface glycoproteins for the interaction with all three selectins. Since excessive recruiting of leukocytes can lead to pathological inflammation associated with arthritis, stroke, reperfusion injury or other diseases, blocking the interaction between sLex and selectins has become an attractive choice for therapeutic intervention. As evidenced in literature, the X-Ray crystal structures of lec-EGF domains of human E-Selectin and rat mannose-binding-protein (MBP) show similar folding. Using the structural information from a complex of MBP with mannose and the NMR structure of sLex docked into E-selectin, several potential selectin inhibitors have been designed and synthesized. Some of the compounds exhibited moderate activity in an E-selectin binding assay.



428.

SYNTHESIS OF AZETIDINYL OXAZOLIDINONES: A NEW CLASS OF POTENT AND HIGHLY WATER-SOLUBLE ANTIBACTERIAL AGENTS. Robert L. Hoffman, Structural, Analytical & Medicinal Chemistry, Pharmacia & Upjohn, 301 Henrietta Street, Kalamazoo, MI 49007. fax 616 833-2232. robert.l.hoffman@am.pnu.com

The oxazolidinones are an important new class of synthetic antibacterial agents that have potent activity against gram-positive bacteria including many multidrug-resistant strains. Linezolid (1, PNU-100766) repre-

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